



Science Directorate Publications and Presentations January 1–December 31, 2000

Compiled by

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TECHNICAL MEMORANDUM

SCIENCE DIRECTORATE PUBLICATIONS AND PRESENTATIONS JANUARY 1 – DECEMBER 31, 2000

NASA REPORTS AND OTHER PUBLICATIONS

Technical Memorandums

1. Science Directorate Publications and Presentations—January 1–December 31, 1999. NASA/TM—2000–210385, July 2000. Compiled by F.G. Summers.

Technical Papers

1. Atlas of Microorganisms from Ancient Phosphorites of Khubsugul (Mongolia). NASA TP—2000–209901. E.A. Zhegallo, A.Y. Rozanov, G.T. Ushatinskaya, R.B. Hoover, L.M. Gerasimenko, and A.L. Ragozina.
2. El Niño During the 1990s: Harbinger of Climatic Change or Normal Fluctuation? NASA TP—2000–209960. R.M. Wilson.
3. On the Bimodality of ENSO Cycle Extremes. NASA TP—2000–209961. R.M. Wilson.
4. The Use of Ferrofluids to Model Materials Processing. NASA TP—2000–210386. F.W. Leslie and N. Ramachandran.

Conference Publications

1. Tenth Biennial Coherent Laser Radar Technology. NASA CP—2000–209758. 2000. Compiled by M.J. Kavaya.

OPEN LITERATURE

Refereed Journal Articles

1. The 1997–98 El Niño Event and Related Wintertime Lightning Variations in the Southeastern United States. *Geophys. Res. Lett.*, 27(4), 541–544, February 15, 2000. S.J. Goodman, D.E. Buechler, K. Knupp, K.T. Driscoll, and E.W. McCaul.
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3. Alfvenicity of Fluctuations Associated with the Kelvin-Helmholtz Instability. *Physics of Plasmas*, 7(7), 2995–3003, July 2000. S. Parhi and S.T. Suess.
4. Assessment of Localized Deformations in Sand Using X-Ray Computed Tomography. *ASTM Geotechnical Testing J.*, 23(3), 274–299, 2000. K.A. Alshibli, S. Sture, N.C. Costes, M.L. Frank, M.R. Lankton, S.N. Batiste, and R.A. Swanson.
5. An Assessment of Magnetic Conditions for Strong Coronal Heating in Solar Active Regions by Comparing Observed Loops with Computed Potential Field Lines. *Astrophys. J.*, 528, 1004–1014, January 10, 2000, Erratum, 538, 467, July 20, 2000. D.A. Falconer, G.A. Gary, R.L. Moore, and J.G. Porter.
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9. Career Bio. *Careers and the Engineer*, 12(1), 49, 2000. C.A. Wilson.
10. Characterizations of ZnSe Single Crystals Grown by Physical Vapor Transport. *J. Crys. Growth*, 208, 237–247, 2000. C.-H. Su, M. Dudley, R. Matyi, S. Feth, and S.L. Lehoczky.
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20. The Proton and Electron Aurora as Seen by IMAGE–FUV and FAST. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1034, 2000. H.U. Frey, S.B. Mende, C.W. Carlson, H. Heeterks, M. Lampton, S.P. Geller, J.M. Stock, R. Abiad, O.H.W. Siegmund, T.J. Immel, J.-C. Cerard, B. Hubert, S. Habraken, E. Renotte, C. Jamar, P. Rochus, J.F. Spann, Jr., and R. Gladstone.
21. Relation to Field Aligned O⁺ Flows at 5000 km Altitude to Auroral Structure and Brightness. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S391, 2000. B.A. Stevenson, J.L. Horwitz, P.D. Craven, T.E. Moore, G.K. Parks, and Y.-J. Su.
22. Relative Influence of Initial Surface and Atmospheric Conditions on Seasonal Water and Energy Balances over the GCIP Region. American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S119, 2000. R.O. Oglesby, S. Marshall, J.O. Roads, and F.R. Robertson.

Published Abstracts (Continued)

23. Remote Sensing of Atlanta's Urban Sprawl and the Distribution of Land Cover and Surface Temperatures. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1041, 2000. C.A. Laymon, M.G. Estes, Jr., and D.A. Quattrochi.
24. Remote Sensing of Atomic Oxygen Column Densities with UVI Images. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S339, 2000. G.A. Germany, W.R. Swift, P.G. Richards, J.F. Spann, Jr., M.J. Brittnacher, and G.K. Parks.
25. The Response of the Ionospheric Cusp to the Solar Wind Through Two Perspectives: Low Energy Charged Particle In-Situ Measurements and Low-Energy Neutral Atom Imaging. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1036, 2000. V.N. Coffey, T.E. Moore, M.O. Chandler, and P.D. Craven.
26. Results of a Deep Chandra Observation of the Crab Nebula and Pulsar. Proceedings of American Astronomical Society, Honolulu, HI, November 8, 2000; *Bull. AAS.*, 32, 3604, 2000. M.C. Weisskopf, W. Becker, R.F. Elsner, S. Kahn, J.J. Kolodziejczak, S. Murray, S. O'Dell, F. Paerels, N. Shibasaki, D.A. Swartz, A.F. Tennant, J. Trumper, and S.N. Zhang.
27. Scattering/Transmission of Energetic H⁺, He⁺, and O⁺ Through a Thin Composite Si/Lexan/C Foil. Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1041, 2000. M.L. Adrian, D.C. Hamilton, G.C. Ho, T.E. Moore, C.J. Pollock, B.I. Magi, and K.C. Hsieh.
28. Simulated Active Region Emission and Dynamics: A STEREO Perspective. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F977, 2000. D.A. Alexander, M.J. Aschwanden, N. Hurlburt, and G.A. Gary.
29. Solar Wind Influence on the Oxygen Content of Ion Outflow in the High Altitude Polar Cap During Solar Minimum Conditions. American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S370, 2000. H.A. Elliott, R.H. Comfort, P.D. Craven, M.O. Chandler, and T.E. Moore.
30. Spaceweather.com: Daily Updates on the Sun and the Effects of Solar Activity on Earth. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1041, 2000. T. Phillips and R.J. Koczor.
31. Stellar Calibration of the WIC and SI Imagers and the GEO Photometers on IMAGE/FUV. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1034, 2000. G.R. Gladstone, S.B. Mende, H.U. Frey, S.P. Geller, T.J. Immel, M. Lampton, J.F. Spann, Jr., J.-C. Gerard, S. Habraken, E. Renotte, C. Jamar, and P. Rochus.
32. The Storm-Time Plasmasphere as Seen by the Extreme Ultraviolet (EUV) Imager on the IMAGE Spacecraft. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1035, 2000. D.L. Gallagher, B.R. Sandel, and D.L. Carpenter.
33. A Study of Magnetospheric-Ionospheric Coupling Processes in the Cusp. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S391, 2000. V.N. Coffey, M.O. Chandler, and T.E. Moore.

Published Abstracts (Continued)

34. SUMI: The Solar Ultraviolet Magnetograph. *Bull. AAS*, 32, 828, 2000. J.G. Porter, J.M. Davis, G.A. Gary, E.A. West, D.M. Rabin, R.J. Thomas, and J.M. Davila.
35. Topside Ionosphere Parameters Observed by POLAR and DMSP at High Latitudes. 2000 Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000; *Eos*, 81(48), F1009, 2000. W. Zeng, J.L. Horwitz, B.A. Stevenson, G.A. Germany, P.D. Craven, F.J. Rich, and T.E. Moore.
36. The Use of Indirect Estimates of Soil Moisture to Initialize Coupled Models and Its Impact on Land Surface/Atmosphere Interactions. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S128, 2000. W.M. Lapenta, W. Crosson, and S. Dembek.
37. Water Vapor Transport Over the Tropical Oceans During ENSO as Diagnosed from TRMM and SSM/1 Data. 2000 Spring Meeting of the American Geophysical Union, Washington, DC, May 30–June 3, 2000; *Eos*, 81(19), S123, 2000. B.-J. Sohn, F.R. Robertson, E.A. Smith, and S.-C. Park.

PRESENTATIONS

1. An Algorithm to Atmospherically Correct Visible and Thermal Airborne Imagery. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. D.L. Rickman, J.C. Luvall, and S. Schiller.
2. Assessment of Constitutive and Stability Behavior of Sands Under Plane Strain Condition. Fifth Microgravity Fluid Physics and Transport Phenomena Conference, Cleveland, OH, August 9–11, 2000. K.A. Alshibli.
3. Biological Molecules: Have Most of our Problems Already Been Solved? Nanotech 2000 Conference, Houston, TX, September 24–29, 2000. J.P. Downey.
4. C/SiC Advanced Mirror System Demonstrator Design. SPIE Conference on Astronomical Telescopes and Instrumentation, Munich, Germany, March 27–31, 2000. B. Catanzaro, G. Mehle, M. Seilonen, U. Papenburg, C. Muller, W. Pfrang, S. Kutter, E. Ruch, R. Mercier, P. Lightsey, et al.
5. Case Study of Solar Wind and IMF Influence on Ionospheric Outflow. Huntsville 2000 Workshop in Calloway Gardens, GA, October 30, 2000. H.A. Elliott, R.H. Comfort, P.D. Craven, M.O. Chandler, and T.E. Moore.
6. The Chandra X-Ray Observatory—An Overview. 33rd COSPAR Scientific Assembly, Warsaw, Poland, July 20, 2000. M.C. Weisskopf.
7. The Chandra X-Ray Observatory Overview—Part I. American Physical Society Meeting, Long Beach, CA, April 30, 2000. M.C. Weisskopf.
8. The Chandra X-Ray Observatory Overview. *American Astronomical Society Meeting*, Rochester, NY, June 4–8, 2000. M.C. Weisskopf.
9. The Chandra X-Ray Observatory: First Year of Operation. 45th Annual SPIE Meeting, San Diego, CA, July 30–August 4, 2000. M.C. Weisskopf, H. Tananbaum, L. Van Speybroeck, and S.L. O'Dell.
10. Characterization of a Fabry-Perot-Based Electrooptic Modulator. Optical Society of America ILS Conference, Providence, RI, October 23, 2000. C.E. Banks, C. Yelleswarapu, A. Sharma, D.O. Frazier, B.G. Penn, and H.A. Abdeldayem.
11. Characterization of Electronic Materials HgZnSe and HgZnTe Using Innovative and Conventional Techniques. AIAA Annual Meeting, Reno, NV, January 10–12, 2000. G. Tanton, R. Kesmodel, J. Burden, C.-H. Su, S.D. Cobb, and S.L. Lehoczky.
12. Characterizing the Use of Ultrasonic Energy in Promoting Uniform Composite Growth in Immiscible Alloys. International Conference on Scientific Computing and Mathematical Modeling, Milwaukee, WI, May 27, 2000. R.N. Grugel and A.I. Fedoseyev.

PRESENTATIONS (Continued)

13. Charge Detector for the Imaging Calorimeter for ACCESS (ICA). The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. J. Lee and J.H. Adams.
14. Coherent Doppler Laser Radar: Technology Development and Applications. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. M.J. Kavaya.
15. Confirmation of NLDN Long Range Strike Locations with LIS Observations. Fall Meeting of the American Geophysical Union, San Francisco, CA, December 15–19, 2000. W.L. Boeck, D.J. Boccippio, S.J. Goodman, K. Cummins, and J. Cramer.
16. Considerations for a Next Generation GRB Observatory. American Physical Society Meeting, Long Beach, CA, April 29–May 2, 2000. G.J. Fishman.
17. Considerations for a Next Generation GRB Observatory. High Energy Astrophysics Division of the American Astronomical Society, Honolulu, HI, November 6–10, 2000. G.J. Fishman.
18. Constitutive and Stability Behavior of Soils in Microgravity Environment. Space Technology App. International Forum, Albuquerque, NM, January 28, 2000. K.A. Alshibli, S. Sture, and N.C. Costes.
19. Control of Convection by Dynamic Magnetic Fields for VB, FZ and THM Crystal Growth Applications. FSRC Crystal Growth and Epitaxy 2000, La Jolla, CA, April 3–5, 2000. K. Mazuruk.
20. Convection Induced by Traveling Magnetic Fields in Semiconductor Melts. Poster presentation at American Conference on Crystal Growth and Epitaxy, Vail, CO, August 12–18, 2000. K. Mazuruk.
21. Correlations and Gravitational Temperature in Settling Suspensions. American Institute of Chemical Engineers Conference, Los Angeles, CA, November 13, 2000. P.N. Segre, F. Liu, P. Umbanhower, and D.A. Weitz.
22. Cross-Linking Studies of Lysozyme Nucleation. International Conference on Crystallization of Biological Micromolecules, Sandestin, FL, May 15, 2000. E. Forsythe and M.L. Pusey.
23. Cryogenic Optical Testing at the Marshall Space Flight Center. OSA Optical Fabrication and Testing Topical Meeting, Quebec, Canada, 2000. R. Eng, J. Keidel, J. Kegley, and J.M. Geary.
24. Crystal Growth of ZnSe and Related Ternary Compound Semiconductors by Vapor Transport. Materials Science Conference, Huntsville, AL, June 8, 2000. C.-H. Su, R.F. Brebrick, A. Burger, M. Dudley, R. Matyi, N. Ramachandran, M.P. Volz, and H. Shih.
25. Crystallization of bFGF-DNA Aptamer Complexes Using a Novel Sparse Matrix for Protein-Nuclei Acid Complexes. ICCBM–8, Sandestin, FL, May 14–19, 2000. C.E. Kundrot and C.L. Barnes.
26. Current Experiments in Microgravity. Gordon Conference, Plymouth, NH, July 26, 2000. D.C. Gillies.

PRESENTATIONS (Continued)

27. The Current Microgravity Materials Science Program. Materials Science Conference, Huntsville, AL, June 8, 2000. D.C. Gillies.
28. Development Approach for the Accommodation of Materials Science Research for the Materials Science Research Facility on the *International Space Station*. Space Technology and Application International Forum (STAIF-00), Albuquerque, NM, January 30–February 3, 2000. D.A. Schaefer, S.D. Cobb, and F.R. Szofran.
29. Development of Constellation-X Optics Technologies at MSFC. 45th Annual SPIE Meeting, San Diego, CA, July 30–August 4, 2000. S.L. O'Dell, W.D. Jones, W.S. Smith, B.D. Ramsey, and D. Engelhaupt.
30. Development of Constellation-X Optics Technologies at MSFC. Yamagata University, Kojirakawa, Yamagata, Japan, February 13–22, 2000. S.L. O'Dell, W.D. Jones, W.S. Smith, and B.D. Ramsey.
31. Development of Materials Science Research Facility (MSRF) and Experiment Apparatus for the *International Space Station (ISS)*. TMS Minerals, Metals, Materials Society Meeting, Nashville, TN, March 12–16, 2000. D.A. Schaefer, S.D. Cobb, and F.R. Szofran.
32. Direct Visualization of an Impurity Depletion Zone. Laboratoire de Cristallographie et Modelisation des Materiaus, Mineraus et Biologiques Symposium, Nancy, France, August 26, 2000. A.A. Chernov, J.M. Garcia-Ruiz, and B.R. Thomas.
33. Dispersion Relation and the Associated Instabilities Occurring in the Plumes. Solar, Heliospheric, and Interplanetary Environments, South Lake Tahoe, NV, June 14–17, 2000. S. Parhi and S.T. Suess.
34. Does Warming a Lysozyme Solution Cook One's Data? American Crystallographic Association Meeting, St. Paul, MN, July 23–28, 2000. M.L. Pusey, M. Burke, and R.A. Judge.
35. Dry Air Entrainment into Hurricane Earl. Institute of Electrical and Electronics Engineers, 2000 International Geoscience and Remote Sensing Symposium, July 24–28, 2000. A.R. Guillory, G.J. Jedlovac, R.J. Atkinson, R.E. Hood, and F.J. LaFontaine.
36. A Dust Grain Photoemission Experiment. 8th Workshop on the Physics of Dusty Plasma, Santa Fe, NM, April 26–28, 2000. C.C. Venturini, J.F. Spann, Jr., M.M. Abbas, and R.H. Comfort.
37. Dusty Plasma Experiments Using an Electrodynamic Balance. International Topical Conference on Plasma Physics: Colloidal Plasma Science, Trieste, Italy, July 3–7, 2000. J.F. Spann, Jr., C.C. Venturini, M.M. Abbas, S.T. Suess, and R.H. Comfort.
38. Effect of Beta-Adrenergic Agonists on Cyclic AMP Synthesis in Chicken Skeletal Muscle Cells in Culture. American Society for Cell Biology, San Francisco, CA, December 10, 2000. R.B. Young and K.Y. Bridge.

PRESENTATIONS (Continued)

39. Effect of Elevated Pressure on the Heat Transfer and Power Requirements During Bridgman Growth of PMN-PT Crystals. 3rd International Workshop Modeling in Crystal Growth, Stony Brook, NY, October 18–20, 2000. A.V. Bune, A.G. Ostrogorsky, C. Martin, and I. Nicoara.
40. The Effect of pH on the Growth and Aspect Ratio of Chicken Egg White Lysozyme Crystals Prepared in Different Buffers. ICCBM–8, Sandestin, FL, May 15, 2000. U.J. Gibson, E.E. Horrell, Y. Kou, and M.L. Pusey.
41. Effect of UV Absorption on Fabrication of Fiber-Optic Bragg Gratings. ILS-VI: 16th Interdisciplinary Laser Science Conference, Providence, RI, October 22–26, 2000. Y. Wang, A. Sharma, and J. Grant.
42. Effects of Gravity on ZBLAN Glass. International Symposium on Non-Oxide Glasses, Florianopolis, Brazil, April 10–11, 2000. D.S. Tucker, G.L. Workman, and G.A. Smith.
43. The Effects of Thermal History on Nucleation of Tetragonal Lysozyme Crystals, or Hot Protein and Cold Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. M. Burke, R.A. Judge, and M.L. Pusey.
44. Electrophoretic Porosimetry of Sol-Gels. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. L.A. Snow, D.D. Smith, L. Sibille, A.J. Hunt, and J. Ng.
45. The Electrostatic Levitation Facility at NASA's Marshall Space Flight Center. 14th Symposium on Thermophysical Properties, Boulder, CO, June 26, 2000. J.R. Rogers, R.W. Hyers, L. Savage, and M.B. Robinson.
46. Entrainment of Upper Level Dry Air Into Hurricane Earl. 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, May 29–June 2, 2000. A.R. Guillory, G.J. Jedlovec, R.E. Hood, R.J. Atkinson, and F.J. LaFontaine.
47. Estimating Cosmic Ray Spectral Parameters from Simulated Detector Responses. The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. L.W. Howell, J. Watts, J. Lee.
48. An Experimental and Mathematical Study to Evaluate the Role of Ultrasonic Energy in Promoting Microstructural Uniformity During Controlled Directional Solidification Processing. 3rd International Aerospace Congress, Moscow, Russia, August 24, 2000. R.N. Grugel and A.I. Fedoseyev.
49. Exploiting the Temperature Dependence of Magnetic Susceptibility to Control Convection in Fundamental Studies of Solidification Phenomena. Microgravity Materials Science Conference, Huntsville, AL, June 6–8, 2000. C.D. Seybert, J.W. Evans, F.W. Leslie, and W.K. Jones.
50. The Fall 2000 and Fall 2001 SOHO-Ulysses Quadratures. 34th ESLAB Symposium, Noordwijk, The Netherlands, October 3–5, 2000. S.T. Suess and G. Poletto.

PRESENTATIONS (Continued)

51. Fine Structure in the Corona and Solar Wind at High Heliographic Latitudes at Solar Maximum. 34th ESLAB Symposium, Noordwijk, The Netherlands, October 3–5, 2000. S.T. Suess and G. Poletto.
52. Fluid Physics and Macromolecular Crystal Growth in Microgravity. Fifth Microgravity Fluid Physics and Transport Phenomena Conference, Cleveland, OH, August 10, 2000. R.A. Judge, M.L. Pusey, E.H. Snell, N. Chayen, T.J. Boggon, and J.R. Helliwell.
53. Fluorescence Studies of Protein Crystal Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. J. Sumida and M.L. Pusey.
54. Future Missions for Gamma-Ray Astronomy. Annual Meeting of the American Physical Society, Starkville, MS, November 3, 2000. C.A. Meegan.
55. The Generation of Smooth High Solar Wind From Plume-Interplume Mixing. Ultra Violet Coronagraph Spectrometer Team Meeting, Northeast Harbor, ME, September 27, 2000. S.T. Suess and S. Parhi.
56. Glass/Jamming Transition in Colloidal Aggregation. AIChE Conference, Los Angeles, CA, November 13, 2000. P.N. Segre, V. Prasad, and D.A. Weitz.
57. The GLAST Burst Monitor. Marcel Grossman Meeting, Rome, Italy, July 2, 2000. C.A. Meegan.
58. Global Climate Monitoring with the EOS PM-Platform's Advanced Microwave Scanning Radiometer (AMSR–E). 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9–14, 2000. R.W. Spencer.
59. The Global Precipitation Mission: Understanding Rainfall Across the Scale Spectrum. Jet Propulsion Laboratory, Pasadena, CA, October 2, 2000. E.A. Smith.
60. Gravitational Influences on the Growth of Polydiacetylene Films by Ultraviolet Solution Polymerization. American Chemical Society Conference, San Francisco, CA, March 25–31, 2000. D.O. Frazier.
61. Gravity Effects in Diffusive Coarsening of Bubble Lattices: von Neumann's Law. Annual Microgravity Science and Space Symposium, Reno, NV, January 12, 2000. D.A. Noever.
62. Gravity-Related Transport Process in Off-Axis Sputtering Deposition. 12th American Conference on Crystal Growth and Epitaxy, Vail, CO, August 13–18, 2000. S. Zhu, C.-H. Su, and S.L. Lehoczky.
63. Growth of Carbon Nanostructure Materials Using Laser Vaporization. 11th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes, Nitrides and Silicon Carbide, Porto, Portugal, September 3–8, 2000. S. Zhu, C.-H. Su, and S.L. Lehoczky.
64. Growth of Solid Solution Single Crystals. Materials Science Conference, Huntsville, AL, June 8, 2000. S.L. Lehoczky, F.R. Szofran, and D.C. Gillies.

PRESENTATIONS (Continued)

65. Halting Convection During Solidification by Application of a Susceptibility Dependent Magnetic Body Force. The Annual Meeting of the Minerals, Metals and Materials Society, Symposium on Experimental Methods in Microgravity, Nashville, TN, March 12–16, 2000. C.D. Seybert, J.W. Evans, F.W. Leslie, and W.K. Jones, Jr.
66. High Resolution X-Ray Diffraction Imaging of Macromolecules with Synchrotron Radiation. American Crystallographic Association, St. Paul, MN, July 23, 2000. V. Stojanof, T.J. Boggon, J.R. Helliwell, R.A. Judge, A. Olczak, E.H. Snell, and D.P. Siddons.
67. High Spatial Resolution Airborne Multispectral Thermal Infrared Remote Sensing Data for Analysis of Urban Landscape Characteristics. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone, AL, November 7–9, 2000. D.A. Quattrochi, J.C. Luvall, and M.G. Estes, Jr.
68. Homoepitaxial ZnO Film Growth. 2000 U.S. Workshop on the Physics and Chemistry of II–VI Materials, Albuquerque, NM, November 1, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, M.T. Harris, M.J. Callahan, P. McCarty, and M.A. George.
69. Hurricane Wind Field Measurements with Scanning Airborne Doppler Lidar During CAMEX–3. 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, May 29–June 2, 2000. J. Rothermel, D.R. Cutten, J.N. Howell, L.S. Darby, R.M. Hardesty, D.M. Tratt, and R.T. Menzies.
70. IMAGE and the Plasmasphere: Model and Data Comparison. Huntsville 2000 Workshop, Callaway Gardens, GA, October 29–November 3, 2000. D.L. Gallagher, B.R. Sandel, and D. Ober.
71. IMAGE EUV Observations and Modeling of the Plasmaspheric Density Trough Associated with the 24 May 2000 Geomagnetic Storm. Huntsville Workshop 2000 “A New View of Space,” 2000. M.L. Adrian, D.L. Gallagher, J.L. Green, and B.R. Sandel.
72. Imaging Calorimeter for ACCESS Simulations with GEANT/FLUKA. The American Physical Society Meeting, Long Beach, CA, April 29–May 3, 2000. J. Watts, L.W. Howell, and J. Lee.
73. Imaging of the Sunyaev-Zel’dovich Effect in Clusters of Galaxies. High Energy Astrophysics Division (HEAD), American Astronomical Society, Honolulu, HI, November 6–10, 2000. M.K. Joy.
74. Influence of Microgravity on Silica Sol-Gel Formation. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. L. Sibille, D.D. Smith, R. Cronise, A.J. Hunt, D.B. Wolfe, L.A. Snow, S. Oldenberg, and N. Halas.
75. Insert Concepts for the Material Science Research Rack (MSRR–1) of the Material Science Research Facility (MSRF) on the *International Space Station (ISS)*. TMS Minerals, Metals, Materials Society Meeting, Nashville, TN, March 12–16, 2000. M. Crouch, B. Carswell, J. Farmer, F. Rose, P. Tidwell.

PRESENTATIONS (Continued)

76. Integration of the Empirical Exospheric GCPM Plasma Model into IRI. 33rd Committee on Space Research, Scientific Assembly, Warsaw, Poland, July 16–23, 2000. D.L. Gallagher and D. Bilitza.
77. Interannual Variability of the Tropical Energy Balance: Reconciling Observations and Models. TRMM Science Meeting, Greenbelt, MD, October 20–November 2, 2000. F.R. Robertson and D.E. Fitzjarrald.
78. Interannual Variability of Tropical Precipitation as Represented in Satellite-Based Data Sets. 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9–14, 2000. F.R. Robertson, D.E. Fitzjarrald, J. Roads, and E.W. McCaul.
79. Interannual Variations in Satellite Observed Top-of-Atmosphere Longwave Clear-Sky Radiation and Consistency with Diagnostics from Global Climate Models. 80th AMS Annual Meeting on Satellite Meteorology and Oceanography, Long Beach, CA, January 9–14, 2000. F.R. Robertson, W.D. Braswell, and D.E. Fitzjarrald.
80. Investigating the Role of the Earth's Ionosphere in Space Weather: Modeling and Observations of High-Latitude Ionospheric Outflows. Space Storms & Space Weather Hazards, NATO Adv. Study Institute, Crete, Greece, June 19–29, 2000. J.L. Horwitz, W. Zeng, B.A. Stevenson, X.-Y. Wu, G.A. Germany, Y.J. Su, P.D. Craven, F.J. Rich, and T.E. Moore.
81. Is It Possible to Have the Similar Unit Cell in Crystals of Different Form From the Same Macromolecule? (A Case Study of Ribosome Crystals). ICCMB–8 Conference, Sandestin, FL, May 18, 2000. E.A. Karpova.
82. I–V Characteristics of a Ferroelectric Field Effect Transistor. 12th Symposium on Integrated Ferroelectrics, Aachen, Germany, March 12, 2000. T.C. MacLeod and F.D. Ho.
83. Laboratory Studies of Optical Characteristics and Condensation Processes of Cosmic Dust Particles. 8th Workshop on the Physics of Dusty Plasma, Santa Fe, NM, April 26–28, 2000. J.F. Spann, Jr., M.M. Abbas, and C.C. Venturini.
84. Lessons From Communicating Space Science Over the Web. IEEE Aerospace 2000, Big Sky, MT, March 18–25, 2000. D. Dooling and D. Triese.
85. Lingering Problems in Gamma-Ray Observations of GRBs. Marcel Grossman Meeting, Rome, Italy, July 2, 2000. C.A. Meegan.
86. Macromolecule Crystal Quality Improvement in Microgravity: The Role of Impurities. American Crystallographic Association Annual Meeting, St. Paul, MN, July 23, 2000. R.A. Judge, E.H. Snell, M.L. Pusey, M.G. Sportiello, P. Todd, H. Bellamy, G. Borgstahl, M. Pokross, and J.M. Cassanto.
87. Materials Science Research Hardware for Applications on the *International Space Station*: An Overview of Typical Hardware Requirements and Features. 38th American Institute of Aeronautics and Astronautics (AIAA) Conference, Reno, NV, January 10–13, 2000. D.A. Schaefer, M.R. Fiske, and R. Srinivas.

PRESENTATIONS (Continued)

88. May 3 Tornadoic Supercells Viewed from Space During an Overpass of the NASA TRMM Observatory Poster Presentation. National Symposium on the Great Plains Tornado Outbreak of 3 May, 1999, Oklahoma City, OK, April 30–May 3, 2000. S.J. Goodman, D. Buechler, K. Driscoll, D.W. Burgess, and M.A. Magsig.
89. Measurement of Temperature Fluctuations and Microscopic Growth Rates in a Silicon Floating Zone on TEXUS36. European Space Components Conference, Noordwijk, The Netherlands, March 20, 2000. A. Croell, M. Schweizer, P. Dold, T. Kaiser, M. Lichtensteiger, and K.W. Benz.
90. Mechanisms for the Crystallization of ZBLAN. NASA Microgravity Materials Conference, Huntsville, AL, June 8, 2000. E.C. Ethridge and D.S. Tucker.
91. Metal Nanoparticle Aerogel Composites. International Symposium on Aerogels VI, Albuquerque, NM, October 9, 2000. D.D. Smith, L. Sibille, E. Ignont, and L.A. Snow.
92. Metrology of Optical Beam Expander for Space Readiness Coherent Lidar Experiment (SPARCLE). OSA Optical Fabrication and Testing Topical Meeting, Quebec City, Canada, June 18–22, 2000. T. Blackwell, F. Amzajerian, and T.J. Kester.
93. Microgravity Research Results and Experiences from the NASA *Mir* Space Station Program. Space Station Symposium, T6—Joint Session on Recent International Research Results from *Mir*, Rio de Janeiro, Brazil, October 26, 2000. R.A. Schlagheck and B. Trach.
94. Modeling of a Non-Dilute Alloy Solidification Under Terrestrial and Microgravity Conditions. International Congress of Theoretical and Applied Mechanics, Chicago, IL, August 28, 2000. A.V. Bune, D.C. Gillies, and S.L. Lehoczky.
95. Modeling of Ultrasonically Generated Liquid-Liquid Dispersions During Controlled Directional Solidification. University of New York, Stony Brook, NY, October 8, 2000. R.N. Grugel and A.I. Fedoseyev.
96. Molecular View of Protein Crystal Growth: Molecular Interactions, Surface Reconstruction, and Growth Mechanism. ICCBM–8, Sandestin, FL, May 15, 2000. A. Nadarajah, H. Li, J.H. Konnert, and M.L. Pusey.
97. MSFC Research in Lightweight, X-Ray Mirrors for the Constellation-X Mission. OSA Optical Fabrication and Testing Topical Meeting, Quebec City, Canada, June 18–22, 2000. W.D. Jones and S.L. O'Dell.
98. Multiple Satellite Observations of High-Latitude Ionospheric Outflows. The First S-Ramp Conference, Sapporo, Japan, October 4, 2000. J.L. Horwitz, W. Zeng, B.A. Stevenson, X.-Y. Wu, G.A. Germany, P.D. Craven, F.J. Rich, and T.E. Moore.

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99. Multi-Use Space Optics Test Facility. OSA Optical Meeting, Quebec, Canada, June 18–23, 2000. J.C. Reily, J. Kegley, J. Keidel, R. Siler, E. Wright, D. Jacobson, S. Smith, R. Eng, and H.P. Stahl.
100. The NASA Materials Science Research Program. The Future of New Discoveries on the International Space Station. Canadian Space Agency—Spacebound 2000, Vancouver, Canada, May 16, 2000. R.A. Schlagheck and B. Trach.
101. NASA Sponsored Research Involving Crystallization of Biological Materials. ICCBM–8, Sandestin, FL, May 14–19, 2000. J.P. Downey.
102. NASA's Needs for Biomaterials Within the HEDS Initiative. Spacebound 2000, Vancouver, Canada, May 15, 2000. D.C. Gillies.
103. New Directions in NASA's Biological Crystal Growth Program on the International Space Station. Gordon Research Conference, Boston, MA, July 6, 2000. C.E. Kundrot.
104. New Directions in NASA's Biological Crystal Growth Program on the International Space Station. American Crystallographic Association Meeting, St. Paul, MN, July 22, 2000. C.E. Kundrot.
105. Novel Directional Solidification of Hypermonotectic Alloys. Materials Science Conference, Huntsville, AL, June 8, 2000. R.N. Grugel and A.I. Fedoseyev.
106. Novel Materials for Application as Shielding During Extended Space Flights. Radiation Shielding Workshop, Berkeley, CA, August 8, 2000. R.N. Grugel.
107. Numerical and Experimental Investigation of the Effects of Acceleration Disturbances on Microgravity Experiments. First International Symposium on Microgravity Research and Applications in Physical Sciences and Biotechnology, Sorrento, Italy, September 11, 2000. N. Ramachandran.
108. Observational Review of Gamma-Ray Bursts. Joint European Nations Astronomical meeting, Moscow, Russia, May 29–June 3, 2000. G.J. Fishman.
109. Observations with the Chandra X-Ray Observatory—The First Year. Annual Meeting of the American Physical Society, Starkville, MS, November 3, 2000. M.C. Weisskopf.
110. On Measuring Cosmic Ray Energy Spectra with the Rapidity Distributions. American Physical Society Meeting, Long Beach, CA, April 30, 2000. J.H. Adams, G. Hachindzhagyan, A. Chilingarian, L. Drury, et al.
111. Onset of the Magnetic Explosion in Filament-Eruption Flares and CMEs. Catholic University of America, Washington, DC, March 6–9, 2000. R.L. Moore and A.C. Sterling.

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112. Onset of the Magnetic Explosion in Filament-Eruption Flares and Coronal Mass Ejections: Single-Bipole Events. SHINE 2000, South Lake Tahoe, NV, June 14–17, 2000. R.L. Moore and A.C. Sterling.
113. Onset of the Magnetic in Coronal Mass Ejections. Ultraviolet Coronal Spectrometer/Solar Heliospheric Observatory 2000 Science Meeting, Northeast Harbor, Maine, September 27, 2000. R.L. Moore, A.C. Sterling, H. Hudson, and J.R. Lemen.
114. Optical Lightning Detection from Space. Lecture at University of Arizona, Tucson, AZ, November 6, 2000. H.J. Christian.
115. Optical Test of NGST Developmental Mirrors. Astronomical Telescopes and Instrumentation Conference, Munich, Germany, March 27–31, 2000. J.B. Hadaway, J.M. Geary, P. Reardon, B. Peters, J. Keidel, and G. Chavers.
116. Overexpression of Human Bone Alkaline Phosphatase in *Pichia Pastoris*. 2000 Current Topics in Gene Expressions Systems Conference, San Diego, CA, September 25, 2000. C. Malone and L.J. Karr.
117. Overview of Mirror Technology Development for Large Lightweight Space-Based Optical Systems. SPIE Conference on Intelligent Systems and Advanced Manufacturing, Boston, MA, November 5–8, 2000. W.S. Smith and H.P. Stahl.
118. An Overview of the MSFC Electrostatic Levitation Facility. Materials Science Conference, Huntsville, AL, June 8, 2000. J.R. Rogers, M.B. Robinson, R.W. Hyers, L. Savage, and T. Rathz.
119. Particle Engulfment and Pushing by Solidifying Interfaces. Materials Science Conference, Huntsville, AL, June 7, 2000. D.M. Stefanescu, S. Mukherjee, F.R. Juretzko, A.V. Catalina, S. Sen, and P.A. Curreri.
120. Particle Engulfment and Pushing Microgravity Experiments and Mathematical Modeling. First International Symposium on Microgravity Research and Application, Sorrento, Italy, September 11, 2000. D.M. Stefanescu, A.V. Catalina, F.R. Juretzko, S. Mukherjee, and S. Sen.
121. Particle Identification in the ACCESS Mission. American Physical Society Meeting, Long Beach, CA, April 30, 2000. J.H. Adams, K.C. Kim, E.S. Seo, and J.Z. Wang.
122. Phase Shift Interferometer and Growth Set Up to Study Step Pattern Formation During Growth from Solutions. Influence of the Oscillatory Solution Flow on Stability. NASA Microgravity Materials Conference, Huntsville, AL, June 8, 2000. A.A. Chernov, N.A. Booth, P.G. Vekilov, B.T. Murray, S.R. Coriell, and G.B. McFadden.
123. Physics for the Correction of a Calibrated Airborne Scanner, Visible to Thermal Bands. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. D.L. Rickman, S. Schiller, and J.C. Luvall.

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124. The Plasmasphere as Seen by the IMAGE EUV Instrument. The Geospace Environment Modeling (GEM) Workshop, Aspen, CO, June 19–23, 2000. D.L. Gallagher and B.R. Sandel.
125. A Portable Ground-Based Atmospheric Monitoring System (PGAMS) for the Calibration and Validation of Atmospheric Correction Algorithms Applied to Aircraft and Satellite Images. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. S. Schiller, J.C. Luvall, and D.L. Rickman.
126. Potential Pitfalls Related to Space-Based Lidar Remote Sensing of the Earth with an Emphasis on Wind Measurement. SPIE's Second International Asia-Pacific Symposium on Remote Sensing of the Atmosphere, Osaka, Japan, October 12, 2000. M.J. Kavaya, G.D. Spiers, and R.G. Frehlich.
127. Preparation and Characterization of Fluorescent Derivatives of Chicken Egg White Lysozyme. ICCBM–8, Sandestin, FL, May 15, 2000. J. Sumida, E. Forsythe, and M.L. Pusey.
128. The Preparation Conditions of Chromium Doped ZnSe and Their Effect on the Infrared Luminescence Properties. 12th American Conference on Crystal Growth and Epitaxy, Vail, CO, August 14, 2000. A. Burger, K. Chattopadhyay, J.O. Ndad, X. Ma, S.H. Morgan, C.I. Rablau, C.-H. Su, and S. Feth.
129. Propulsion from a Rotating EM Tether at Jupiter. 38th Aerospace Science Conference, Reno, NV, January 10–13, 2000. D.L. Gallagher and J. Moore.
130. Protein Crystal Growth Dynamics and Impurity Incorporation. LCM3B Symposium, Nancy, France, August 26, 2000. A.A. Chernov and B.R. Thomas.
131. Protein Crystals Grow Purer in Space: Physics of Phenomena. First International Symposium on Microgravity Research and Application in Physical Science and Biotechnology, Sorrento, Italy, September 10, 2000. A.A. Chernov.
132. Purification of Restriction Endonuclease EcoRII and Its Co-Crystallization with DNA-Substrate. ICCMB–8 Conference, Sandestin, FL, May 18, 2000. E.A. Karpova, L. Chen, E.J. Meehan, and M.L. Pusey.
133. Quench Module Insert (QMI) and the Diffusion Module Insert (DMI) Furnace Development. Space Technology and Application International Forum (STAIF–00), Albuquerque, NM, January 30–February 3, 2000. M. Crouch, B. Carswell, J. Farmer, F. Rose, and P. Tidwell.
134. The Question of Impurities in Macromolecule Crystal Quality Improvement in Microgravity. Spacebound 2000, Vancouver, Canada, May 15, 2000. R.A. Judge, E.H. Snell, M.L. Pusey, M.G. Sportiello, P. Todd, H. Bellamy, G. Borgstahl, M. Pokross, and J.M. Cassanto.

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135. Recent Enhancements of the Phased Array Mirror Extendible Large Aperture (PAMELA) Telescope Testbed at MSFC. Astronomical Telescopes and Instrumentation Conference, Munich, Germany, March 27–31, 2000. J. Rakoczy, E.E. Montgomery, and J. Lindner.
136. Reduced Gravity Z-Blan Optical Fiber. 38th AIAA Aerospace Sciences Meeting and Exhibit, Reno, NV, January 10–13, 2000. D.S. Tucker, G.L. Workman, and G.A. Smith.
137. Reduction of Defects in Germanium-Silicon. Microgravity Materials Science Conference, Huntsville, AL, June 8, 2000. F.R. Szofran, K.W. Benz, S.D. Cobb, A. Croell, P. Dold, N. Kaiser, S. Motakef, M. Schweizer, M.P. Volz, L. Vujisic, and J.S. Walker.
138. Reduction of Effective Acceleration to Microgravity Levels. American Chemical Society Conference, San Francisco, CA, March 25–31, 2000. J.P. Downey.
139. Reduction of Sample Rotation in Electrostatic Levitation. TMS Conference, Nashville, TN, March 14, 2000. R.W. Hyers, W.L. Johnson, L. Savage, and J.R. Rogers.
140. Replication of Low Density Electroformed Normal Incidence Optics. Diffractive Optics and Micro-Optical/Optical Fabrication and Testing Topical Meeting, Quebec City, Canada. J.M. Ritter.
141. Results of the “Find It” Focus Area of the SERDP/Legacy Jointly Sponsored Cultural Resource Management Workshop. Partners in Environmental Technology (Environmental Challenging for Next Decade) Technical Workshop, Arlington, VA, November 28–30, 2000, p. 93. T.L. Sever.
142. SHIVA: Spaceflight Holography Investigation in a Virtual Apparatus. 10th International Conference on the Applications of Lasers in Fluid Mechanics, Lisbon, Portugal, July 8, 2000. J.D. Trolinger, R. Rangel, C. Coimbra, W.K. Witherow, and J.R. Rogers.
143. SHIVA: Spaceflight Holography Investigation in a Virtual Apparatus. AIAA Aerospace Conference, Reno, NV, January 12, 2000. J.D. Trolinger, R. Rangel, C. Coimbra, R.B. Lal, W.K. Witherow, and J.R. Rogers.
144. Shock Formation of Slow Magnetosonic Waves in Coronal Plumes. UVCS Team Meeting, Northeast Harbor, ME, September 26, 2000. M. Cuntz and S.T. Suess.
145. Size Exclusion Chromatography Studies of the Initial Self-Association Steps of Chicken Egg White Lysozyme Nucleation. ICCBM–8, Sandestin, FL, May 15, 2000. F. Ewing, D. Donovan, and M.L. Pusey.
146. Solidification Studies from the Electrostatic Levitation System at the Marshall Space Flight Center. TMS Conference, Nashville, TN, March 13, 2000. J.R. Rogers, R.W. Hyers, M.B. Robinson, L. Savage.
147. Specifications of a Plasmasphere Modeling Code for GGCM. The Geospace Environment Modeling (GEM) Workshop, Aspen, CO, June 19–23, 2000. D.L. Gallagher and D. Ober.

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148. Status of Cycle 23 Forecasts. Chapman Conference on Space Weather, Clearwater, FL, March 20–24, 2000. D.H. Hathaway.
149. Status on NGST Mirror Technology. A Discussion Session on NGST Mirror Technology. H2L2 Workshop ISAS (Institute of Space and Astronautical Science), Japan, April 17–18, 2000. D. Jacobson.
150. Stratospheric Sampling and In Situ Atmospheric Chemical Element Analysis During Meteor Showers: A Resource Study. Space 2000 Conference, Albuquerque, NM, February 28–March 2, 2000. D.A. Noever.
151. Structural Fluctuations and Thermophysical Properties of Molten II–VI Compounds. Materials Science Conference, Huntsville, AL, June 8, 2000. C.-H. Su, S. Feth, H. Mook, R. Scripa, S. Zhu, and S.L. Lehoczky.
152. Substrate Preparations in Epitaxial ZnO Film Growth. Twelfth American Conference on Crystal Growth and Epitaxy, Vail, CO, August 13–18, 2000. S. Zhu, C.-H. Su, S.L. Lehoczky, M.T. Harris, M.J. Callahan, and M.A. George.
153. SUMI: The Solar Ultraviolet Magnetograph Investigation. 31st Meeting of the Solar Physics Division (SPD) of the AAS, Stateline, NV, June 19–22, 2000. J.M. Davis, J.G. Porter, G.A. Gary, E.A. West, D.M. Rabin, R.J. Thomas, and J.M. Davila.
154. Sunspots and Giant-Cell Convection. 31st Meeting of the Solar Physics Division of the AAS, South Lake Tahoe, NV, June 18–22, 2000. R.L. Moore, D.H. Hathaway, and E.J. Reichmann.
155. Ten Years of Gamma-Ray Bursts Observations with BATSE. Gamma-Ray Bursts in the Afterglow Era Workshop, Rome, Italy, October 17–20, 2000. G.J. Fishman.
156. Thermal Remote Sensing and the Thermodynamics of Ecosystem Development. International Workshop “Advances in Energy Studies,” Porto Venere, Italy, May 20–29, 2000. J.C. Luvall, J.J. Kay, and R.F. Fraser.
157. Thermophysical Property Measurement and Materials Research in the NASA/MSFC Electrostatic Levitator. Space Technology and Applications International Forum, Albuquerque, NM, February 12, 2001. J.R. Rogers, R.W. Hyers, T. Rathz, L. Savage, and M.B. Robinson.
158. Tornadic Supercells on May 3, 1999 Viewed from Space During an Overpass of the NASA TRMM Observatory. TRMM Science Meeting, Greenbelt, MD, October 29–November 2, 2000. S.J. Goodman, D. Buechler, K. Driscoll, D.W. Burgess, and M.A. Magsig.
159. TRMM/LIS Lightning: Going Beyond Climatological Composites. TRMM Science Meeting, Greenbelt, MD, October 29–November 2, 2000. D. J. Boccippio, S. Heckman, N.O. Renno, P.C.D. Milly.

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160. Turbulent Transition in Electromagnetically Levitated Droplets. Poster presentation at Materials Research Society 2000 Fall Meeting, Boston, MA, November 28, 2000. R.W. Hyers, G. Trapaga, B. Abedian, and D.M. Matson.
161. Use of Computed Tomography for Characterizing Materials Grown Terrestrially and in Microgravity. Materials Science Conference, Huntsville, AL, June 8, 2000. D.C. Gillies and H.P. Engel.
162. Use of Geostationary Satellite Data to Force Land Surface Schemes Within Atmospheric Mesoscale Models. Proceedings of Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling, and Simulation, Redstone Arsenal, AL, November 7–9, 2000. W.M. Lapenta, R.J. Suggs, R.T. McNider, G.J. Jedlovec, and S.R. Dembek.
163. The Use of Thermal Remote Sensing to Study Thermodynamics of Ecosystem Development. Workshop on Multi/Hyperspectral Sensors, Measurements, Modeling and Simulation, Redstone Arsenal, AL, November 7–9, 2000. J.C. Luvall and D.L. Rickman.
164. Utilizing Controlled Vibrations in a Microgravity Environment to Understand and Promote Microstructural Homogeneity During Float-Zone Crystal Growth. Materials Science Conference, Huntsville, AL, June 7, 2000. A.V. Anilkumar, J. Bhowmick, and R.N. Grugel.
165. Visualizing the Impurity Depletion Zone Around Holoferitin Crystals Growing in Gel with Ferritin Dimers. ICCBM–8 Conference, Sandestin, FL, May 15, 2000. A.A. Chernov, B.R. Thomas, J.M. Garcia-Ruiz.
166. A Workshop on High Energy Astrophysics for Amateur Astronomers. High Energy Astrophysics Division of the American Astronomical Society, Honolulu, HI, November 6–10, 2000. G.J. Fishman and J.A. Mattei.
167. XTE J1906+09 Observations with RXTE. High Energy Astrophysics Division Meeting, Honolulu, HI, November 8, 2000. C.A. Wilson, M.H. Finger, P. Woods, and E. Gogus.
168. XTE J1946+274 = GRO J1944+26 Observations with RXTE and BATSE. Rossi 2000: Astrophysics with the Rossi X-Ray Timing Explorer, Greenbelt, MD, March 22–24, 2000. C.A. Wilson, M.H. Finger, and D.M. Scott.

APPENDIX—SCIENCE DIRECTORATE PREPRINTS

1. Comparison of Total Precipitable Water from Satellite and Model Reanalysis Fields. Preprints, 10th Conference On Satellite Meteorology and Oceanography, Long Beach, CA, pp. 418–421; January 9–14, 2000. G.J. Jedlovec, R.J. Suggs, and S. Haines.
2. Entrainment of Upper Level Dry Air Into Hurricane Earl. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, 11A.5, pp. 358–359; May 20–June 2, 2000. A.R. Guillory, G.J. Jedlovec, R.E. Hood, R.J. Atkinson, and F.J. Lafontaine.
3. Evaluation of Skin Temperatures Retrieved from GOES–8. Preprints, 10th Conference on Satellite Meteorology and Oceanography, Long Beach, CA, pp. 137–140; January 9–14, 2000. R.J. Suggs, G.J. Jedlovec, W.M. Lapenta, and S. Haines.
4. Hurricane Wind Field Measurements with Scanning Airborne Doppler Lidar During CAMEX–3. Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Fort Lauderdale, FL, pp. 354–355; May 29–June 2, 2000. J. Rothermel, D.R. Cutten, J.N. Howell, L.S. Darby, R.M. Hardesty, D.M. Tratt, and R.T. Menzies.
5. An Investigation of Precipitation Structures in Hurricane Bonnie. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, P1.35, p. 183; May 29–June 2, 2000. D.J. Cecil, E.J. Zipser, G.M. Heymsfield, R.E. Hood, and M.G. Bateman.
6. Passive Microwave Observations of Hurricanes Bonnie, Danielle, and Georges. American Meteorological Society, Preprints, 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, 11A.1, pp. 596–597, May 29–June 2, 2000. R.E. Hood, A.R. Guillory, and F.J. Lafontaine.
7. Tropical Microwave Brightness Temperature Data from AMPR. American Meteorological Society, Preprints of 24th Conference on Hurricanes and Tropical Meteorology, Ft. Lauderdale, FL, P1–21, pp. 594–595, May 29–June 2, 2000. F.J. Lafontaine, R.E. Hood, and A.R. Guillory.

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REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operation and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503				
1. AGENCY USE ONLY (Leave Blank)		2. REPORT DATE July 2001		3. REPORT TYPE AND DATES COVERED Technical Memorandum
4. TITLE AND SUBTITLE Science Directorate Publications and Presentations January 1–December 31, 2000			5. FUNDING NUMBERS	
6. AUTHORS Compiled by F.G. Summers				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) George C. Marshall Space Flight Center Marshall Space Flight Center, AL 35812			8. PERFORMING ORGANIZATION REPORT NUMBER M–1023	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) National Aeronautics and Space Administration Washington, DC 20546–0001			10. SPONSORING/MONITORING AGENCY REPORT NUMBER NASA/TM–2001–211143	
11. SUPPLEMENTARY NOTES Prepared by Science Directorate, Science and Engineering Directorate				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unclassified-Unlimited Subject Category 88 Nonstandard Distribution			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) This document lists the significant publications and presentations of the Science Directorate during the period January 1–December 31, 2000. Entries in the main part of the document are categorized according to NASA Reports (arranged by report number), Open Literature, and Presentations (arranged alphabetically by title). Also included for completeness is an Appendix (arranged by page number). Most of the articles listed under Open Literature have appeared in refereed professional journals, books, monographs, or conference proceedings. Although many published abstracts are eventually expanded into full papers for publication in scientific and technical journals, they are often sufficiently comprehensive to include the significant results of the research reported. Therefore, published abstracts are listed separately in a subsection under Open Literature. Questions or requests for additional information about the entries in this report should be directed to Dr. A.F. Whitaker (SD01; (256) 544–2481) or to one of the authors.				
14. SUBJECT TERMS Scientific and Technical Publications			15. NUMBER OF PAGES 56	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	